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ABSTRACT

This report describes school operation changes in scheduling, curriculum, decisionmaking powers, and individualization of instruction that are concurrent with the adoption of differentiated staffing. The author defines differentiated staffing, explains where and at what levels it has been utilized, provides descriptions of results achieved, gives some idea of the cost of implementing differentiated staffing, and provides a rationale for and lists the steps crucial to its implementation. The appendixes contain a directory of school and State departments of education that encourage differentiated staffing, a list of Federally funded projects, some comparative cost analysis figures between this approach and traditional schools, and a bibliography. (Author/MLF)

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# DIFFERENTIATED STAFFING

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SUMMARY

Many schools consist of 1,000 square foot boxes with one teacher and 30 pupils. Alternative models are needed. Differentiated staffing is one such alternative.

This descriptive report discusses the following questions:

1. What is DS? DS involves varied types of learning conditions, organizational alternatives for teachers and the schools and varied grouping conditions for students. Indeed, DS means concurrent changes in many features of schools: scheduling, curriculum, decision-making power and individualization of instruction (Cooper, 1972).

2. At what levels is DS utilized? DS is practiced at elementary, secondary and collegiate levels, but it is more common at elementary and junior high levels.

3. At what locations has DS been tried? DS is being implemented throughout Florida and a number of other states have made provisions for teacher education and certification concerning DS. More than 700 schools in the nation used some form of DS in 1971-72 and a list of 31 DS projects which are federally funded are listed in Appendix B.

4. What are the results? Some teachers and administrators may not want DS and a school district may encounter public resistance. Accordingly, some failures of DS can be anticipated and have been reported. On the other hand, successes have been reported in varying degrees at Kansas City, Missouri, Temple City and Cherry Creek, Colorado

5. What are the costs? Modest cost increases were reported from Kansas City, Missouri resulting from DS. A cost model was provided by Krumbein that a district superintendent might use to forecast costs of DS. Appendix C compares costs of typical DS schools versus traditional schools.

6. Why should districts try DS? DS has been urged to provide improved incentives to teachers, to correct defective organizational structures, to change school programs, to improve school staffing policies, to improve and revise the roles of teachers, to provide an alternative to a hierarchical power structure of school districts, to comply with federal guidelines, to reduce costs, to implement educational technology, to improve teacher assignment policies and to deal better with teacher attrition.

7. What does a district do to begin using DS? Crucial steps in implementation are:

a. Make certain that sufficient planning time is available.

b. Be sure the teachers and administrators are ready for DS.

## WHAT IS DIFFERENTIATED STAFFING

DS is not an end in itself. It should serve as the vehicle of change. Plans to implement it should come after basic decisions have been made on the instructional program. Then DS should appear as an integral part of other curricular and instructional reforms (Barbee, 1972).

DS implies subdividing the global role of the teacher into different professional and paraprofessional subroles according to specific functions and duties that are to be performed in schools (Cooper, 1972).

DS is a search for new teaching roles, but innovators have had difficulty in predicting new roles and have found new roles cannot be devised without considering the purposes and settings in which they are to be used. Without clear notions about what kind of a school is to be created, devising staffing patterns is a guessing game. We still need to discover how to improve staff utilization (Edelfelt, 1972).

DS means different things at secondary and elementary levels. At the secondary level, the Temple City project provides senior teachers to be organized according to disciplinary areas, e.g., English and mathematics. But in the elementary school, senior teachers are provided in areas like instruction, technology and guidance (Cooper, 1972).

Since DS is one of the many plans that function together in the operation of the schools, it may be helpful to define DS in relation to its essential functions, ingredients, conditions and kinds of models. These matters are discussed.

### Definitions of Differentiated Staffing

Earl (1969) described DS as a response to structural lag in school systems, an attempt to correct inefficient use of human resources by providing more individualized use of teacher talent.

DS has been defined by the National Commission on Teacher Education and Professional Standards as a plan for recruitment, preparation, induction and continuing education of staff personnel for schools that would bring a much broader range of manpower to education than is now available. It should facilitate professional development and assign teachers so that their talents and interests are utilized fully in meeting pupils' needs.

DS models of staffing organization are based largely upon the Trump or Allen plans. Lloyd Trump suggested interdisciplinary team teaching with horizontal differentiation of peers in 1959. Different talents are used by teachers for the common good of students. The role of the teacher is that of an adviser and facilitator of learning. Dwight Allen suggested his hierarchical model in 1964. This plan calls for each position with its own salary range. There are also three levels of paraprofessionals: instructional aides, educational technicians and

clerks. The basis of the Allen plan is reported to be differentiation of responsibilities (Keefe, 1971).

Essential Conditions

DS is perceived by some workers as an essential feature of a new kind of school: the multiunit school. This has a different kind of structure. There is a school policy committee consisting of unit leaders, principals, the curriculum coordinator and the head of instruction. There is also a steering committee for instructional improvement consisting of a school principal, the curriculum director and the unit leaders. There are also units of about 100 students served by a differentiated staff. A unit consists of a team leader, perhaps two teachers, about two student teachers and two or three paraprofessionals. The multiunit school has been tried at the Martin Luther King School at Toledo, Ohio (Nussel and others, 1971). According to Education Training Market Report (1971) the first multiunit schools started in 1967-68; by 1970-71 there were 99 in Wisconsin and 65 in other states. The Wisconsin Research and Development Center is developing materials and instructional procedures and assisting in implementation. With assistance from state education agencies and the Wisconsin R and D Center, there are 250 schools that moved in 1971-72 to the multiunit organization in Colorado, Connecticut, Illinois, Indiana, Minnesota, New Jersey, Ohio, South Carolina and Wisconsin (cf. Klausmeier, 1967).

Many plans of DS forecast differentiation of paraprofessionals and other nonprofessional personnel. Bazelli (1969) forecast the use of graduates of junior colleges and technical schools as instructional technologists and aides. Other persons from the local community could serve as monitorial and clerical help. They will be employed in more highly developed departments like a counseling and testing center, a media production and distribution center and the information retrieval center (library).

Caldwell (1971) believes that peer evaluation is an essential ingredient of DS. There are at least two concepts of teacher evaluation. The conventional practice is monitoring. This concept holds that administrators should monitor teachers to prevent poor practices and to catch teachers if they do make errors. This is faulty. The problem is that administration is limited in knowledge about teachers and cannot be expected to monitor them adequately. A better concept is peer evaluation to help teachers to improve their practices. The characteristics of peer evaluation are:

1. The evaluator is a teammate who observes over a long period of time (principals are external evaluators whose visits are too short and occasional, are only staged situations).
2. Evaluator should be a specialist in the subject area.
3. Evaluator should be a service agent able to assist the teacher in solving his problems.

4. The evaluator himself should be evaluated by those whom he evaluates.
5. Each teacher should establish his growth plan with the evaluator and be evaluated with respect to that plan.
6. Evaluations should be written in performance terms rather than nebulous generalizations.
7. Evaluation should not be inhibited by forms or check lists.
8. Disciplinary action, if any, should be initiated by peers whose professional stature is being demeaned by the defective actions of a colleague.

Engel (1971) suggested teachers should evaluate teachers for purposes of determining pay. Teachers should determine who are to serve in roles of team leader, senior teacher or master teacher. Each teacher should have the opportunity to decide for himself whether to seek higher pay levels or settle for a shorter work year or less demanding positions.

Dwight Allen (1969) holds that three conditions are necessary for DS:

1. A minimum of three staffing levels, each with its own salary range.
2. A maximum salary at the top teaching category that is at least double the maximum at the lowest.
3. Substantial direct teaching responsibilities at all levels.

Top level teachers should have only annual tenure and at most these would comprise only 25 per cent of the instructional staff. Staff and associate teachers could have tenure and would comprise at least 75 per cent of the staff.

Another essential ingredient of DS is modular scheduling with each student involved in large group, small group and laboratory instruction. Backstrom (1971) reported that Skyline High School at Idaho Falls has attempted to implement these new ideas along with many others. There are 21 modules of 20 minutes in a school day. Both teachers and students have unscheduled time between classes. Teachers may have all three types of classes to prepare for each week. Scheduling is done in such a way that students have at least two teachers in the same subject each week. This gives students additional points of view. Thus modular scheduling is needed to introduce flexibility and variability into instruction.

Development of Models

English (1969) suggested ten steps with which to produce more acceptable models of DS: assessment of needs of students, teachers and community; formulation of goals based on needs; preparation of measurable outcomes; separation of learning tasks into common categories; relation of categories to teacher skills; knowledge and attitudes in producing outcomes; reclassification of teaching tasks into vertical and horizontal hierarchies;

establishment of salary ranges for hierarchies based upon supply and demand, level of training and experiences; determination of changes in school structure; establishment of personnel policies and establishment of screening groups and criteria.

Kinds of Models

Many kinds of models have been proposed. Learning tasks (McKenna, 1967) were made the basis of differentiation by pairing them with the required teaching behaviors and arranging the result hierarchically (Weissman, 1969; reply Rand, 1969). This results in a five-level hierarchy that provides for the following roles: teacher technologist, liberal enlightener, identifier of pupil talents, developer of talents and facilitator of attitude and interpersonal development (English, 1969; cf. McKenna, 1967). A variety of models is described in McKenna's (1969) annotated bibliography. John McDonald, e.g., made a case for replacing the omnicapable teacher with the omnicapable team. The team model provides for semipermanent core members, floating members and subprofessionals. Edgar Dale suggested six roles for teachers: help others find their roles, effective communicator of ideas and feelings, an exemplar, policy planner, selector, user, producer or evaluator of instructional materials and a user of media. Harris (1969) said roles must be redefined into a hierarchy of skills and pay levels assigned at competence levels.

Some states are developing models of DS. Delaware is developing a career ladder for recruitment and preparation of teachers. The individual can choose his own level at which to qualify and stay at that level or move up. The intern teacher has an intern certificate and an A.B. degree. He is enrolled in the master's education program. Level two is the associate teacher with two years of college or the equivalent. He is enrolled in the teacher education program and has the appropriate certificate. Level three is the assistant teacher with one year of college. He is enrolled in the teacher education program and is issued a permit to teach. Level four is the teacher aide with a high school diploma. The aide is enrolled in the teacher education program (Staropoli and Rumsey, 1971). Similarly, Massachusetts has keyed DS to certification. Four licenses are planned: internship, associate teacher, professional teacher and specialist. Certification is based upon observed performance rather than upon transcript record. For every 1,000 students in public schools, the plan calls for 15 specialists, 15 professionals, 20 associates and 25 interns or paraprofessionals. Teacher competence is defined and judged by professionals (Stiles, 1969). Florida has a plan for individualization of teaching through staff differentiation (Franks, 1970).

A hierarchical model of DS was used at Kansas City, Missouri. One goal was to list the functions of teachers and to differentiate roles which can be accomplished by personnel of various levels of competence. Three principles were used to form the hierarchy: responsibilities of teachers do differ, teachers need particular career patterns and salaries should be differentiated in terms of levels of responsibilities. The following levels were established with separate pay ranges: coordinating

instructors, senior instructors, instructors, associate instructors, interns, student teachers and paraprofessionals. The following categories were considered when the task was undertaken of defining these categories: the task (large group, small group, individual instruction), responsibility for preparation of materials, special competencies needed, preparation and developmental stage of the teacher, length of the workday or workyear, creativeness, talent, attitude, responsibility for prescriptions and the techniques of instruction used. Using these categories, job descriptions were constructed for each level, specifying the personal and professional qualifications, certification, time and salary associated with each level. Salary ranges were defined separately for different levels of educational qualifications: the bachelor degree, the master degree, the master degree with additional study and the doctoral degree. Thirty-minute modules were scheduled flexibly. Basically, the plan is that teachers who have more responsibility and competence work longer hours and get paid more. This is an experimental plan of two years' duration to determine whether the approach can be made to work in an all black constituency (Hair and Wolkey, 1969).

The following descriptions of staff positions show the requirements that are used to select persons for the different positions (Hair and Wolkey, 1969).

Coordinating Instructor

Duties: Participates in the teaching process and teaches demonstration classes; coordinates activities with a broad segment of the curriculum; evaluates the total program from this segment of the curriculum and suggests a course of action; supervises the ordering and distribution of supplies, materials and equipment; has responsibility in assessing community needs; investigates and initiates curriculum innovation; evaluates and selects new curricular materials; is responsible to principal; makes decisions relative to the segment of the instructional program.

Qualifications: Well versed in action research techniques; knowledgeable in field of supervision and curriculum development; skillful in human relations; committed to teaching as a career; able in evaluating and implementing new curricula and innovative practices in education; minimum of master's degree in elementary or secondary education, as appropriate; has had successful teaching experience; superior knowledge in a subject field; demonstrated organizational ability.

Certification: State certification in elementary education or subject field.

Time: Understands that leadership responsibilities will require time beyond the usual work day (after school, evenings, weekends); minimum day 8 a.m. to 4:30 p.m.; works 44 weeks per year.

Senior Instructor

Duties: Serves as a team leader; participates on the team as a full-time teacher, is a member of the instructional council for the school; diagnoses and prescribes for the needs of the individual children in his team; supervises training of student teachers; exerts leadership in a subject field (in junior high); plans and schedules daily and long-range activities; is responsible to the coordinating instructor.

Qualifications: Ability to lead members of a team; interest in and willingness to share and try innovative experiences; demonstrates a knowledge of the total school curriculum; major preparation in a subject field (in junior high); minimum of a bachelor's degree in education plus acceptable graduate work; demonstrated successful classroom teaching experience.

Certification: State certificate in elementary education or subject area.

Time: Work day 8 a.m. to 4:30 p.m.; works 40 weeks per year.

Instructor

Duties: Participates on team as a full-time teacher; works with individuals and small groups in enrichment and developmental activities; responsible for large group presentations in his field of specialization; takes part in innovational activities; aids pupils in selecting adequate materials; follows plans as scheduled; is responsible to the senior instructor of his team.

Qualifications: Willingness to participate in a program of ongoing in-service educational activities; minimum of a bachelor's degree in elementary education or secondary education; demonstrated successful teaching and/or student teaching experience.

Certification: State certificate in elementary education or subject area.

| | |
|---|---|
| Time: | Follows schedule of regular teaching day as defined in the "Administrative Code": minimum day 8 a.m. to 3:30 p.m.; works 40 weeks per year. |

Associate Instructor

| | |
|---|---|
| Duties: | Part-time teacher; participates in teaching as assigned by the senior instructor; uses plans and schedules developed by the team; responsible to the senior instructor. |
| Qualifications: | B.A. Degree. |
| Certification: | State certificate in elementary education or secondary education. |
| Time: | Five and one-half hour school day; works 40 weeks a year. |

Student Teacher

| | |
|---|---|
| Duties: | Follows activities as determined by the college or university student teaching policy; participates in observing and teaching activities as prescribed by the senior instructor; is responsible to the assigned senior instructor. |
| Qualifications: | Senior college or graduate student participating in student teaching; be working toward a certificate in teaching; willingness to participate in a program of in-service educational activities. |
| Certification: | None |
| Time: | Follows work day schedule as prescribed by college or university advisor. |

Intern

| | |
|---|---|
| Duties: | Is a full-time intern for a semester; participates in teaching activities as prescribed by the coordinating instructor; follows the course of action as described by his university or college advisor; contributes to the teaching team in a field or fields of instruction; is responsible to the coordinating instructor. |
| Qualifications: | Graduate student intern; be working toward a certificate in teaching; willingness to participate in a program |

of ongoing in-service educational activities.

Certification: Internship status with a college or university.

Time: Follows schedule of regular teaching day as defined in the "Administrative Code."

Paraprofessional
(Teacher Aide)

Duties: Full-time or part-time member of the staff; does clerical duties as assigned by instructors; supervises movement of children; takes daily attendance; prepares instructional materials; prepares orders for instructional materials and supplies; sets up and operates machines as required; is responsible to coordinating instructor, senior instructor and instructors as assigned.

Qualifications: High school diploma (some college work desirable); relates positively to children; willingness to participate in a program of ongoing in-service educational activities; demonstrates acceptable oral speech patterns.

Certification: None

Time: Follows work day time schedule which varies according to need.

Weisse (1970) proposed what might be called the competitive model of DS. He suggested basing the teacher's salary not on training and experience, but on the number of students that enroll in his classes. If this was done, boring teachers might be forced out of the profession or into a subordinate role. Competition for student enrollment should serve as a change agent to restructure the staff and curriculum of the school. Course requirements could be replaced by performance criteria for a school leaving certificate. Responsibility for meeting performance criteria would shift from school board and teacher to student and his parents and give them greater voice and responsibility for staff selection. Successful teachers with large enrollments would need to hire differentiated staff members to assist them in coping with tasks with the large enrollment. The results would be DS and curriculum reform away from academic disciplines into meaningful experiences evolving from interests of society and students. The administrator's role would change to coordination of services among teachers. While there are immense problems with the proposed staffing procedures, there is also the opportunity to increase the effectiveness of teaching. Students would be expected to select courses and teachers who contribute the most to meeting performance

standards.

Bicknell and others (1970) contributed eight reports regarding the POISE model of DS. This is the Pupil Oriented and Individualized Systems of Education model which is being developed at the Teacher Education Research Center at Fredonia College, New York. The model provides for the following positions: principal, unit leader, teachers and nonprofessional aides (clerical and instructional materials). Positions are paid according to defined levels of professional competence. The authors believe that DS is necessary for individualized instruction.

Bhaerman, who represents the American Federation of Teachers Quality Education Standards in Teaching project, asserted that vertical certification and differentiation plans are unsound and are opposed to union policy. Horizontal differentiation is proposed (Bhaerman, 1969). All aspects of the teacher's role would assume equal importance. This change would make schools accountable to the clients of education and avoid the dysfunction and divisiveness that are inherent in vertical plans. Union policy on DS has ten "articles of faith": opposed to vertical staffing, support the single salary schedule, approve horizontally differentiated roles and responsibilities as consistent with the union idea of extra pay for extra work, will reject any plan of DS if it reduces the number of staff, any plan must involve the teacher's union, must use collective bargaining, and will not support educational solutions that do not enhance classroom processes, etc.

The Top of the World Elementary School at Laguna Beach, California, is using a provocative approach to DS with four features:

1. A ten-pupil instructional group
2. Four teaching-learning situations: large and small group instruction, independent study and practice
3. Teacher specialization in terms of teaching-learning situations: large group teacher, seminar teacher, laboratory teacher and subject coordinator. The large group teacher requires the least skill, and the situation is least effective. The seminar teacher is a learning monitor who prescribes instruction and evaluates pupils. The most important teacher function is diagnosing learner needs and the master teacher functions at this level. The laboratory teacher is the media expert who works on subject and content matters, creates learning experiences and reinforces skills. The subject coordinator has responsibility for grouping, goals, objectives, content of materials in each subject and for coordination of all activities into a whole.
4. Pupil "pods" up to 240 students with 18 to 24 cluster groups, which are grouped according to learning style of the pupils, e.g., deductive or inductive thinkers.

Haven (1972) reported that the idea was to build, rather than install, a staffing pattern to solve individual school needs.

Dimensions of Models

English, who directs the well-known Temple City DS project, suggested that the various models of DS vary in four basic modalities: learning, teaching, curriculum and organizational paradigms. Few models are based upon the learning paradigm. Most use divisions of responsibility, e.g., curriculum development, versatility in handling instruction and organizational or administrative duties (English, 1969, 1970).

## AT WHAT EDUCATIONAL LEVELS IS STAFF DIFFERENTIATED

Implementation of DS seems to depend upon the problem of staff acceptance (Connors, 1969). DS was introduced into three elementary schools at Cherry Creek, Colorado, but the staff of the junior high school is divided over the idea and has not tried it yet. The senior high school staff is strongly opposed so DS will not be extended to the high school at this time. The well-known Temple City project has been implemented at the Oak Avenue Intermediate School. A new elementary school building and a new junior high school building were constructed and the staff were specially selected in advance for DS at Kansas City, Missouri (Stocker, 1970).

Stocker (1970) listed the addresses and gave resumes of 31 school districts with DS schools. (See Appendix A.) The majority appear to implement DS at elementary and junior high levels with somewhat fewer districts implementing DS at high school level. There were several districts with DS at all levels. At Duluth, Minnesota, a program began at one elementary school, was adapted to other schools and it is now expanding in the direction of all students in the city (Esbensen, 1968). Dissemination occurred in the opposite direction at Beaverton, Oregon, where DS originated with the high school (975 students) and will extend to the junior high and elementary schools (Differentiated Staffing, 1970). ERIC published a list of 31 DS projects that have been funded by the United States Office of Education (Staff Differentiation, 1970). (See Appendix B.)

DS has been planned at the college level. The Hillsborough Junior College at Tampa, Florida, has prepared a plan (Staff and Program, 1969). The teacher education program at New Mexico State University uses DS work experience with students to prepare them for differentiated schools of the future (Teacher and His Staff, 1969). Fredonia College, New York, provides in-service training programs in DS for teachers through the Teacher Education Research Center (Teacher Education Research Center, 1969).

## AT WHAT LOCATIONS HAS DIFFERENTIATED STAFFING BEEN TRIED

Who has implemented DS?

Florida has the only program of statewide scope in the United States. Growing out of a 1968 special session of the state legislature, there are pilot programs in three diverse school districts: Dade County (Miami), Leon County (Tallahassee) and Sarasota County (Stocker, 1970). This is a project of the Florida State Department of Education (cf. Frinks, 1970; Augenstein, 1968). The Department of Education has been mandated to organize for DS (Edelfelt, 1972).

The Ohio State Department of Education recently surveyed DS pre-service and continuing education programs for teachers. Results were used to identify potential improvements and to suggest models for making improvements (Teacher Education, 1970). Nussel and others (1971) discussed Ohio's use of the multiunit school with DS. Tryout occurred at Toledo.

Massachusetts has prepared a career ladder model for the recruitment and preparation of teachers. The individual can choose at what level to qualify, stay at that level or move up in the ladder (Staropoli and Rumsey, 1971).

The Niskayuna Public Schools, New York, have a four-year project involving DS (Cooperative Program, 1969). The aims for the first year included the following projects:

1. Develop pilot programs for DS teams.
2. Analysis by System Development Corporation of the tasks of educational personnel.
3. Job descriptions and definitions of differentiated roles from administration to clerical levels.
4. Development of self-instructional materials for each differentiated role.
5. Develop a plan to initiate six to eight operational teams to test new roles.
6. Specify behavioral and attitudinal changes expected from student and staff.
7. Establish continuing evaluation program.

The Temple City Unified School District uses the Allen hierarchical model of DS. The school day is organized into 25 modules of 15 minutes. Each school is governed by an academic senate which develops and implements instructional policies. Members of the senates are senior teachers and principals. The plan takes decision-making out of the administrative hierarchy and shares it among the most talented teachers, those who serve on the academic senates (Allen, 1969). Senior teachers are selected by teachers. The differentiated staff at Temple City includes 60 associate teachers, 85 staff teachers, 20 senior teachers and four master teachers along with aides at three levels and clerks. Stover (1969) described the positions, responsibilities, training, salary and tenure plans.

Stocker (1970) listed the addresses of 31 school districts with DS schools (see Appendix A). ERIC published a different list of 31 DS projects that have been funded by the United States Office of Education (see Appendix B).

More than 700 multiunit schools will operate with DS in 1971-72 according to Education-Training Market Report (1971). Information regarding these schools can be obtained from the Wisconsin Research and Development Center.

Florida State University has been funded by the United States Office of Education to evaluate DS nationwide, but little is known of the project or its results (Edelfelt, 1972).

## WHAT ARE THE RESULTS

How well does DS work in the schools?

DS has been reported to fail initially at Dade County, Florida, caused a teacher strike at Montgomery County, Maryland, and encountered varying degrees of success at Beaverton, Oregon, Sarasota; Florida and Niskayuna, New York (English, 1969).

The problem is that the staff does not want DS in many instances. Both teachers and administrators may not want DS even when plans have been approved for a project (Connors, 1969).

Harris (1970) reported that the DS project at the all black Martin Luther King Jr. Junior High School at Kansas City, Missouri, appeared to have some success. The hierarchical positions and teacher aide structure generally operated well in a modular framework in spite of the handicap presented by two instructional coordinators who were of little help in curriculum development.

Stocker (1970) reported of the Temple City project that it has changed the role of the principal so that he becomes a social manager, an educational leader. There has been a change in evaluation of teachers. Teachers are not evaluated by administrators occasionally, but daily by master and senior teachers. In turn, master and senior teachers are evaluated and elected annually by the teachers whom they serve. Teachers can replace their leaders at any time. There has also been a change in decision-making. Decisions are made in instructional matters by an academic senate in each school. This group prepares the operating budget, recommends employment. Teachers like the idea at Temple City of being involved in decision-making and of sharing ideas in curriculum development. Teachers accept decisions of senior teachers better than those of administrators because they know the senior teacher is one of them, teaching as they do. Not all teachers approve the DS idea. There are some minor complaints. Students were reported to like the freedom the DS gives them and they have few, if any, complaints.

Generally speaking, the DS pay differential benefits the younger teachers, but it is too small to benefit older teachers, many of whom already make more than team leaders.

Complete evaluations have not been reported so it is still too early to attempt any conclusions on the results of DS.

## WHAT ARE THE COSTS OF DIFFERENTIATED STAFFING

DS plans often propose differentiated salary ranges for professionals and paraprofessionals. Bishop and Carlton proposed a hierarchical model like that of Allen's and suggested the following pay ranges for the various positions:

| Title | Pay Range |
|---|---|
| Specialist | $17,000 - $25,000 |
| Master Teacher | 15,000 - 17,500 |
| Staff Teacher | 10,000 - 15,500 |
| Probation Teacher | 8,500 - 9,950 |
| Intern Teacher | 7,500 |
| Instructional Associate | 6,000 - 7,500 |
| Instructional Assistant | 5,500 - 6,500 |
| Instructional Aide | 5,000 - 6,000 |

The Temple City salary plan sets policies for a total of 4,600 students. A faculty to serve this student body follows:

| Number | Title | Pay Range |
|---|---|---|
| 4 | Master Teacher | $15,500 - $25,000 |
| 20 | Senior Teacher | 14,500 - 17,500 |
| 85 | Staff Teacher | 7,500 - 11,000 |
| 66 | Associate Teacher | 6,500 - 9,000 |

Ranges of three auxiliary support levels were not given (Stover, 1969).

Salary ranges for the Kansas City, Missouri projects were lower for the year 1968-69. Coordinating instructors with the doctoral degree could earn $11,616 to $13,794 with a lower range for the master's degree. Senior instructors could earn in the range of $7,430 to $12,314 with a doctoral degree. The range for instructors was $6,800 to $11,240 with a doctoral degree. The range for the associate instructors was $3,800 to $4,200 with a master's degree with 36 hours graduate training (Hair and Wolkey, 1969; cf. Stoke, Appendix C).

Staffing costs of DS at the Mary Harmon Weeks Elementary School and the Martin Luther King Jr. Junior High School were compared with those of traditional schools. Both Kansas City, Missouri schools had about 1,000 students. The cost increase due to DS was only $19,987 in a $300,000 program at the former school and it was only $17,678 in a $500,000 program at the latter school (Hair and Wolkey, 1969).

Stocker (1970) reported comparative analyses of the same schools with traditional organization. For the Weeks school, the cost increase due to DS was $18,087 with about $4,000 of the increase in the category of administration. At the King school, the cost increase was reported at $17,689 with no difference in administrative salaries.

Using the Temple City model, Krumbein (1970) suggested a policy on the proportions of positions in the hierarchy: master teachers--four per cent; senior teachers--12 per cent; staff teachers--54 per cent and associate teachers--30 per cent.

A cost model was provided by Krumbein (1970) to help district superintendents tell exactly what DS would cost a district if it was implemented. Given the resource constraints of the district, the method uses a policy on proportions of positions in the hierarchy, projects teacher position and distribution ratios for several years ahead and determines salary costs of the hierarchical positions on the basis of those ratios.

## WHY SHOULD EDUCATION TRY DIFFERENTIATED STAFFING

What are the effects for which DS has been proposed as a remedy?

### School Organization

Opinions upon this subject vary widely. Shaefer (1970) holds both positive and negative views. The present system does not always provide adequate incentives for good teachers.

A poll of administrators (Opinion Poll, 1970) concluded that a plurality (47 per cent) believe some form of DS would be beneficial to school districts, a majority (64 per cent) would try some plan if given adequate funds and many (44 per cent) believe research is needed.

Dwight Allen (1969) asserted that the present patterns of school organization are defective. The problems of education cannot be attacked effectively with these patterns. Even the attempts at reform are defective. DS patterns cannot be proposed by just inventing responsibility levels and job descriptions as we are now doing. DS requires reorganization of the basic structure of the schools with full participation of teachers at every point.

Allen and Kline (1969) contended that schools must change. Society needs much more than the school is capable of giving. Moreover, education must do more than train people to earn a living. It must deal adequately with human relations, aesthetics and communications.

### Instructional Organization

A recent policy statement of the National Commission on Teacher Education and Professional Standards asserted that the job of the teacher

has become unmanageable. The instructional organization of the self-contained classroom with one teacher is obsolete. No single individual has the competence, energy and time to deal with all the responsibilities that are assigned to a teacher (Earl, 1969; cf. Denemark, 1967).

Edelfelt (1969) said that present staffing policies are defective. Schools usually offer only one basic instructional position and one salary schedule. Teachers reach maximum responsibility too soon and the ceiling on salaries is too low. Teachers who want greater responsibilities must either leave teaching or remain underemployed in teaching. There is no system for varied utilization of manpower. Every teacher must have all the skills that are required for teaching, be certified and be a full-time teacher. The staffing policy is all or nothing.

Caldwell (1971) said that education today generally has a hierarchical power structure. This leads to a closed organization climate with poor human relations and hierarchical decision-making. This structure stultifies the self-actualization process for teachers, many of whom long for and have the capacity for growth. DS is a way to alleviate the organizational problem and provide opportunities for growth of teachers. Specific practices can be used to change decision-making so that teachers can participate.

Connors (1969) reported that Superintendent Jack Rand originated the Temple City DS project. A survey of the manner in which Temple City teachers spent their time indicated that one-third was spent in nonteaching chores. The Temple City project replaced self-contained classrooms with resource centers for supervised study under supervision of carefully selected paraprofessionals and with large and small study groups under flexible scheduling organization.

## Federal Guidelines

DS is prescribed in Education Professions Development Act guidelines (Caldwell, 1970). Differentiated roles cannot be developed in a rigidly scheduled school with a single mode of instruction, i.e., a closed classroom. Schools cannot be changed by piecemeal approaches. Comprehensive planning is needed. DS must be regarded as a part of a global, comprehensive approach to educational planning that includes flexible scheduling, diffused decision-making, differentiated salaries and responsibilities for teachers, use of paraprofessionals, involvement of staff in selection of teacher leaders, individualized instruction and performance criteria for teacher evaluation (Caldwell, 1971).

## Cost Reduction

Present practices of removing qualified teachers from classrooms and assigning them to nonteaching functions are costly. Canfield (1970) surveyed these practices in four New York City schools and then estimated costs of nonteaching assignments in 200 junior and senior high schools at $8 million. Part-time, uncertified paraprofessionals could be used for these functions to reduce costs.

False Assumptions

Present staffing practices frequently reflect these questionable assumptions:

1. All teachers are omnicapable.
2. All are more alike than they are different.
3. The only way to reward teachers is by the single salary schedule.
4. Education cannot assess the relation between teaching and learning.
5. Teachers cannot monitor themselves (Olivero, 1970).

The omnicapable teacher should be replaced by the omnicapable team of instructional specialists (Edelfelt, 1969).

Educational Technology

It is doubtful that the emerging educational tasks of developing pupils' interpersonal attitudes and behaviors can be accomplished by computer assisted instruction and educational television. These complex goals can be promoted by a model of staff differentiation that takes the learning tasks into account and provides differentiation on the basis of learning tasks of pupils (McKenna, 1967).

The self-contained classroom with one instructor does not provide effective use of technology. DS is a logical development of team teaching and the use of specialized skills and services. Duties of staff are then assigned on the basis of experience, capabilities and interests and teachers are paid on the basis of services rendered rather than degrees and length of employment (Sterm, 1970).

Assignment Policies

Present assignment patterns are being scrutinized and criticized. Teacher assignments (62,898) in Iowa were analyzed from 13,550 secondary teachers and related to assignment policies and school characteristics. It was found that 27 per cent of subjects were taught by teachers who had less than 18 semester hours preparation. Teacher preparation and teaching assignments were most closely related in art, music and vocational courses and least related in mathematics, language arts and social studies. The efficiency of assignments increased with the increase in the size of the school. Academic subjects were taught by teachers with less preparation than that of special subject teachers. Teacher salaries and size of enrollment were positively related to efficiency of assignment (Scamman and Manatt, 1967).

Some so-called nongraded programs resemble traditional programs more than Goodlad and Anderson's original proposal in 1959. For example, in assigning teachers, many schools give little consideration to teacher's choice. Much variation is found. Some teachers are assigned to the same group of students two consecutive years while other teachers have frequent changes. The suggestion was made of a policy of annual reassignment of elementary teachers to a different grade level. The

assumptions of expertise, seniority and psychological identity that are used to support a policy of assignment to one grade, year after year, may be questioned (Gorman, 1969).

Teacher Attrition

Experimental evidence has been reported that connects teacher rewards with attrition. A questionnaire was constructed to determine the equity teachers perceive for their contributions and it was used with 26 stayers and 20 leavers from a traditionally organized school, 24 stayers and 35 leavers from a school that used DS. Stayers reported a higher degree of perceived equity than leavers and DS stayers perceived higher equity than stayers of a traditional school (Planz and Gibson, 1970). Deficiencies in perceived equity in traditional schools appear related to attrition in teachers.

## WHAT DOES A DISTRICT DO TO BEGIN USING DS

The result of two years of planning at Temple City Unified School District was a new organizational plan with differentiated staffing of teachers and flexible scheduling of students. "They had to go together." "To try one without the other would not have worked," Rand asserted (Connors, 1969).

"Superintendents who visit Temple City say to me, 'I want to start a system like this in my district by September. What should I do?'" Rand recalls. "Well, they simply can't do it that way. The teachers have to be ready for the change, they have to want it, they have to make it. If it's imposed from outside, it just won't work," (Connors, 1969).

Connors (1969) reported that teachers refused to believe Superintendent Rand really wanted to develop an alternative to autocratic organizational structure even though he told them this was the case. "They wouldn't believe we really wanted their help until we told them we'd burn the project and start over from scratch, if that's what they wanted." "It took about three months before they fully believed us," Rand recalled, "but once they did, things got moving."

A steering committee, made up of a majority of teachers began to plan the teaching hierarchy and the comprehensive reorganization of the school district. The committee decided the comprehensive plan should meet the following needs:

1. career ladder for teachers,
2. mutual evaluation of teachers by teachers, and a share for teachers in decision-making at all levels,
3. individual progress for students,
4. preparation for students to take part in modern world.

Two years were required at Temple City to produce a plan that seemed adequate to the staff of the district.

## APPENDIX A

### A Selected List of Differentiated Staffing Schools and State Departments of Education Encouraging Differentiated Staffing

The following are some of the schools and/or school systems that already have or are contemplating differentiated staffing. The schools are listed in the alphabetical order of the states in which they are located.

Mesa Public Schools
809 W. Main
Mesa, Arizona

Scottsdale Public Schools
3811 N. 44th Street
Phoenix, Arizona 85018

Cerritos Elementary School
ABC Unified School District
17923 Pioneer Boulevard
Artesia, California 90701

Marin County Schools
201 Tamal Vista Boulevard
Corte Madera, California 94925

Fallbrook Union High School District
P. O. Box 368
Fallbrook, California 92028

Fountain Valley School District
No. 1 Lighthouse Lane
Fountain Valley, California 92708

Temple City Unified School District
9516 E. Longden Avenue
Temple City, California 91780

Cherry Creek Schools
4700 South Yosemite Street
Englewood, Colorado 80110

Greenwich Public Schools
P. O. Box 292
Greenwich, Connecticut 06830

Florida State Dept. of Education
374 Knott Building
Tallahassee, Florida 32304

Duval County School District
330 E. Bay Street
Room 513, Court House
Jacksonville, Florida 32202

Downers Grove Public Schools
935 Maple Avenue
Downers Grove, Illinois 60515

Montgomery County Public Schools
850 N. Washington Street
Rockville, Maryland 20850

Amherst-Pelham Regional Schools
Chestnut Street
Amherst, Massachusetts 01002

Weston Public Schools
89 Wellesley Street
Weston, Massachusetts 02193

Jackson Public Schools
290 W. Michigan Avenue
Jackson, Michigan 49201

Wilson Campus School
Mankato State College
Mankato, Minnesota 56001

Independent School District 281
4148 Winnetka Avenue, N.
Minneapolis, Minnesota 55427

Independent School District No. 197
181 W. Butler
West St. Paul, Minnesota 55118

Kansas City School District
1211 McGee Street
Kansas City, Missouri 64104

APPENDIX A
(continued)

Clark County School District
2832 E. Flamingo Road
Las Vegas, Nevada 89109

East Syracuse-Minoa Central Schools
Administration Building
Fremont Road
East Syracuse, New York 13057

Williamsville Central School District
5225 Sheridan Drive
Georgetown Square
Williamsville, New York 14221

Princeton City School District
11080 Chester Road
Cincinnati, Ohio 45246

Dayton City School District
348 W. First Street
Dayton, Ohio 45402

Delaware City District
248 N. Washington
Delaware, Ohio 43015

Beaverton School District No. 48
4855 S. W. Erickson
Beaverton, Oregon 97005

Hood River County Schools
P. O. Box 418
Hood River, Oregon 97031

John Adams High School
Portland Public Schools
5700 N. E. 39th Avenue
Portland, Oregon 97211

Menasha Public Schools
P. O. Box 360
Menasha, Wisconsin 54952

Wisconsin Research and Development
Center for Cognitive Learning
University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

APPENDIX B

Thirty-One Differentiated Staffing Projects
Funded by the U. S. Office of Education

Carl M. Foster
506 W. Hill Street
Louisville, Kentucky 40208

Dwight Allen
School of Education
University of Massachusetts
Amherst, Massachusetts 01002

Richard J. Clark
School of Education
University of Massachusetts
Education 109
Amherst, Massachusetts 01002

Arnold Glovinsky
Wayne County Intermediate
School District
1500 Guardian Building
Detroit, Michigan 48336

Roy Meyer
Mounds View Independent School
District #621
1900 West County Road F
St. Paul, Minnesota 55112

A. Odell Thurman
Kansas City Public Schools
1211 McGee Street
Kansas City, Missouri 64106

Herbert Steffens
Department of Education
Carson City, Nevada 89701

Carl Swanson
Plans and Supplementary Center
New Jersey Department of Education
225 West State Street
P. O. Box 2019
Trenton, New Jersey 06825

Heidi Watts
Antioch-Putney Graduate School
Putney, Vermont 05346

Lloyd K. Bishop
New York University
4 Washington Place R253
New York, New York 10003

Harold V. Wik
School District 48
4855 S. W. Erickson Avenue
Beaverton, Oregon 97005

Charles S. Bowe
Hood River Valley High School
Route 4, Box 270
Hood River, Oregon 97031

Allen L. Dobbins
John Adams High School
5700 Northeast 39th Avenue
Portland, Oregon 97211

Jack Bookbinder
Director of Art Education
Board of Education
21st and Parkway
Philadelphia, Pennsylvania 19103

Ross L. Bortner
Coatesville Area School District 1550
1515 E. Lincoln Highway
Coatesville, Pennsylvania 19320

C. B. Crosswait
Brookings Independent School
District #122
601 Fourth Street
Brookings, South Dakota 57006

Jay B. Taggart
Weber County School District
1122 Washinbton Boulevard
Ogden, Utah 84404

Thomas L. Dugger
Thurston School
2100 Park Avenue
Laguna Beach, California 92651

APPENDIX B
(continued)

William A. Volk
Prince William County Schools
Independent Hill Annex
Manassas, Virginia 22110

Wilfred Gunderson
Ferndale School District #502
P. O. Box 698
Ferndale, Washington 98248

Richard R. Hammes
School of Education
Wisconsin State University
Oshkosh, Wisconsin 54901

B. R. Tabachnick
Curriculum and Instruction
University of Wisconsin
Madison, Wisconsin 53706

William R. Trammell
Randolph Park School
2200 W. 17th Street
Anniston, Alabama 36201

Fenwick W. English
Mesa Public Schools
809 West Main Street
Mesa, Arizona 85202

Hollis H. Moore
Marin County Schools
201 Tamal Vista Boulevard
Corte Madera, California 94925

Norman J. Boyan
Graduate School of Education
University of California
Santa Barbara, California 93106

Clark Lewis
Ontario-Montclair School District
P. O. Box 313
Ontario, California 91764

Bruce Caldwell
Temple City Schools
9516 E. Longden Avenue
Temple City, California 81780

Milton W. Schmidt
Cherry Creek School District
4700 S. Yosemite
Englewood, Colorado 80110

James Moore
374 Knott Building
Tallahassee, Florida 32304

Evelyn F. Carlson
Chicago Board of Education
228 N. LaSalle Street
Chicago, Illinois 60601

APPENDIX C

Comparative Analysis Between Martin Luther King Junior High School and a Traditional Junior High School of Comparable Size

| | KING | | TRADITIONAL | |
|---|---|---|---|---|
| **Administration** | | | | |
| Principal | $ 15,400.00 | | $ 15,400.00 | |
| Vice Principal | 13,475.00 | | 13,475.00 | |
| Subtotal | | $ 28,875.00 | | $ 28,875.00 |
| **Instruction** | | | | |
| 2 Coordinating Instructors | $ 24,310.00 | | -- | |
| 7 Senior Instructors @ $9,200 | 64,400.00 | | | |
| 31 Instructors (Including Librarian) | 267,840.00 | (48) | $410,130.00 | |
| 8 Associate Instructors | 31,200.00 | | -- | |
| 2 Special Education Instructors | 16,740.00 | | 16,740.00 | |
| Subtotal | | $404,490.00 | | $426,870.00 |
| **Certified Service** | | | | |
| 3 Interns | $ 12,000.00 | | -- | |
| 8 Teacher Aides | 22,874.00 | | -- | |
| 2 Counselors | 21,263.50 | (2) | $ 21,263.50 | |
| 1 Nurse | 8,370.00 | | 8,370.00 | |
| 1 Home School Coordinator | 8,370.00 | (4/5) | 6,696.00 | |
| Subtotal | | $ 77,722.50 | | $ 41,174.50 |
| **Noncertificated** | | | | |
| 1 Library Clerk | $ 3,530.00 | | -- | |
| 3 Secretaries | 11,680.00 | | $ 11,680.00 | |
| 1 Registrar | 5,088.00 | | 5,088.00 | |
| 1 Textbook Clerk | 3,650.00 | | 3,650.00 | |
| Subtotal | | $ 23,948.00 | | $ 20,418.00 |
| Total | | $535.035.00 | | $517,337.50 |
| Difference | | | $ 17,698.00 | |

APPENDIX C
(continued)

Comparative Analysis Between Mary Harmon Weeks Elementary School and a Traditional Elementary School of Comparable Size

| | WEEKS | | TRADITIONAL |
|---|---|---|---|
| **Administration** | | | |
| Principal | $ 15,400 | | $ 14,350 |
| Administrative Coordinator | 12,155 | | 9,340 |
| Subtotal | 27,555 | | 23,690 |
| **Staff** | | | |
| 2 Coordinating Instructors | $ 24,310 | | $ -- |
| 7 Senior Instructors | 64,449 | | -- |
| 11 Instructors | 92,070 | (31) | 259,470 |
| 4 Associate Instructors | 15,600 | | -- |
| 4 Interns | 16,000 | | -- |
| 8 Student Teachers | -- | | -- |
| 1 Vocal Music | 8,370 | (1/5) | 1,674 |
| 1 Physical Education | 8,370 | (2/5) | 3,348 |
| 1 Art | 8,370 | (1/6) | 1,395 |
| 1 Speech and Reading | 8,370 | (2/5) | 3,348 |
| 1 Librarian | 8,370 | | 8,370 |
| 1 Health Services Counselor | 8,370 | (1/10) | 837 |
| 1 Professional Nurse | 8,370 | | 5,022 |
| 1 Instrumental Music | 2,092 | | 2,092 |
| 1 Administrative Secretary | 4,000 | | 4,000 |
| 1 Attendance Clerk | 3,467 | | 1,949 |
| 1 Library Clerk | 3,353 | | -- |
| 8 Teachers' Aides | 22,876 | | 1,080 |
| Subtotal | $306,807 | | $292,585 |
| Total | 334,362 | | |
| Difference | | $18,087 | |

APPENDIX C (continued)

## Comparative Personnel Structure

CHERRY CREEK SCHOOLS
Metropolitan Denver, Colorado

### CONVENTIONAL

125-150 Students

| | |
|---|---|
| 21-25 students | 21-25 students |
| 21-25 students | 21-25 students |
| 21-25 students | 21-25 students |

Cost $8,119 x 6 = $48,714

### COMMON SERVICES

Full School

| | |
|---|---|
| 1 Resource Teacher | $ 8,119 |
| 1 Physical Ed. Teacher | 8,119 |
| 1 Music Teacher | 8,119 |
| | $24,357 |

### WALNUT HILLS

| | |
|---|---|
| A L P H A<br>125-150 students | B E T A<br>125-150 students |
| G A M M A<br>125-150 students | 1 TEAM LEADER<br>1 TEACHER<br>1 TEACHER<br>1 BEGINNING TEACHER<br>1 INTERN C.U. TYPE<br>1 INTERN C.S.C. TYPE<br>1 5-HR. TEACHER AIDE<br>1 UNPAID REGULAR STUDENT TEACHER<br>1 HIGH SCHOOL STUDENT |

### OVERALL COMPARISONS

| | Conventional | WH |
|---|---|---|
| Personnel | 18 | 24 3/5 |
| Cost | $175,499 | $136,482 |

### TOTAL COST

$8,119 x 18 = $146,142
$8,119 x 3 = $ 24,357
Teachers Aides = 5,000
$175,499

### TOTAL COST

$37,375 x 3 = $112,125
$ 8,119 x 3 = 24.357
$136,482

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